

## The sixth extinction: an unnatural history

by Elizabeth Kolbert

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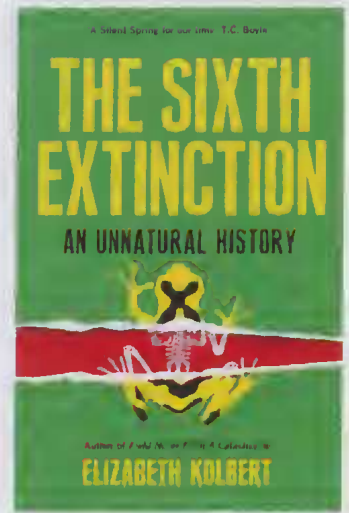
Recently I went on a journey. My final destination was Wuhan, China, but initially I travelled to Panama, to the town of El Valle De Anton. It was only my second trip to Central America; my first was to Leon, Nicaragua just two years prior, and on the flight I imagined colourful market places with volcanoes dotting the horizon.

My guide in El Valle was Elizabeth Kolbert, who took me to the El Valle Amphibian Conservation Center (EVACC), in the middle of a volcanic crater. I was introduced to the scientists working at EVACC, and taken on a field trip where I learnt about the plight of the Panamanian golden frog *Atelopus zeteki* and other amphibians in Central America. For over a decade amphibians across America have been affected by a chytrid fungus that interferes with their ability to take up critical electrolytes through their skin. 'This causes them to suffer what is in effect a heart attack'.

It appears there are two main theories as to how the chytrid fungus has spread so quickly through Central America; one is through the global shipments of African clawed frogs and the other is through the export of North American bullfrogs, both of which have a tolerance for the fungus. The fungus has led to the widespread demise of amphibian populations and the extinction of species.

Kolbert indicated that a similar situation is happening in Australia too. On further investigation I came across an example, research demonstrating that the same species of amphibian chytrid fungus found on skin swabs of two species of corroboree frogs in the Australian Alps was believed to be responsible for the amphibians' declining populations (Hunter *et al.* 2010).

My journey continued to Italy, the Arctic, Sumatra, and the depths of the ancient Iapetus Ocean, all in the pages of Kolbert's book



*The sixth extinction: an unnatural history* that I was reading en route. In the book Kolbert takes the reader on a journey through space and time, and fills her narration with historical anecdotes, interesting adventures of the rigours of travel in remote localities, interviews with leading scientists, and home again to the familiarity of the reader's own backyard.

Kolbert's background in journalism is evident in the style of her writing. I enjoyed the travelogue style, which was very similar to the articles I could read in the inflight magazines. But it is a rather morbid tale of death and demise that focuses on the effects our own species is having on the distribution and diversity of organisms on our planet. A tale created by people just like me travelling around the world or sitting at home in the comfort of their armchair with the gas central heating on, ordering goods from overseas.

The book appealed to my broad interests in history, geography, biology, geology and palaeontology. It is suitable for a wide range of general readers, and provides a snapshot of examples from around the world that students could research further to use as examples for case studies or essays in biogeography, biodiversity, ecology, environmental studies, or history of life. I enjoyed travelling back in time to the plummeting temperatures affecting life in the Earth's oceans during the latter part of the Ordovician (approximately 444 million years ago),

resulting in the second largest mass extinction of all time. It was an extinction event that didn't involve me, just a set of naturally changing environmental conditions that changed the biological components of the world. This was the type of extinction event that I was used to reading about. But what stood out in every chapter of this book was a different way that humans were implicitly or explicitly creating a sixth mass extinction today. This was not so enjoyable to contemplate, but very necessary to the narrative and purpose of the book.

So on arrival in Wuhan, with only a chapter or two to go, I pondered on the carbon footprint of my flight and what fungi, bacteria and viruses I might have unknowingly brought into the country. Also during my stay I was constantly reminded of the changes we make to the

world, with signs displaying the slogan 'Wuhan, changing everyday'. Consequently, before my flight home I took the hotel toothbrush and scrubbed the soles of my shoes, the rocks and fossils I'd collected on my journey, vigorously cleaning any last traces of mud from the surface, leaving a grimy sink behind.

#### References

Hunter DA, Speare R, Marantelli G, Mendez D, Pietsch R, Osborne W (2010) Presence of the amphibian chytrid fungus *Batrachochytrium dendrobatidis* in threatened corroboree frog populations in the Australian Alps. *Diseases of Aquatic Organisms* 92, 209–16.

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Little Pygmy Possum *Cercartetus lepidus*, Murray Sunset National Park. Photo John Harris, Wildlife Experiences P/L.